



# PRODUCT LIFE CYCLE MANAGEMENT CASE STUDY MESISI594224 ANNEE 5

# Product Life Cycle Management

## ■ Case study presentation

ESILV 2024-2025

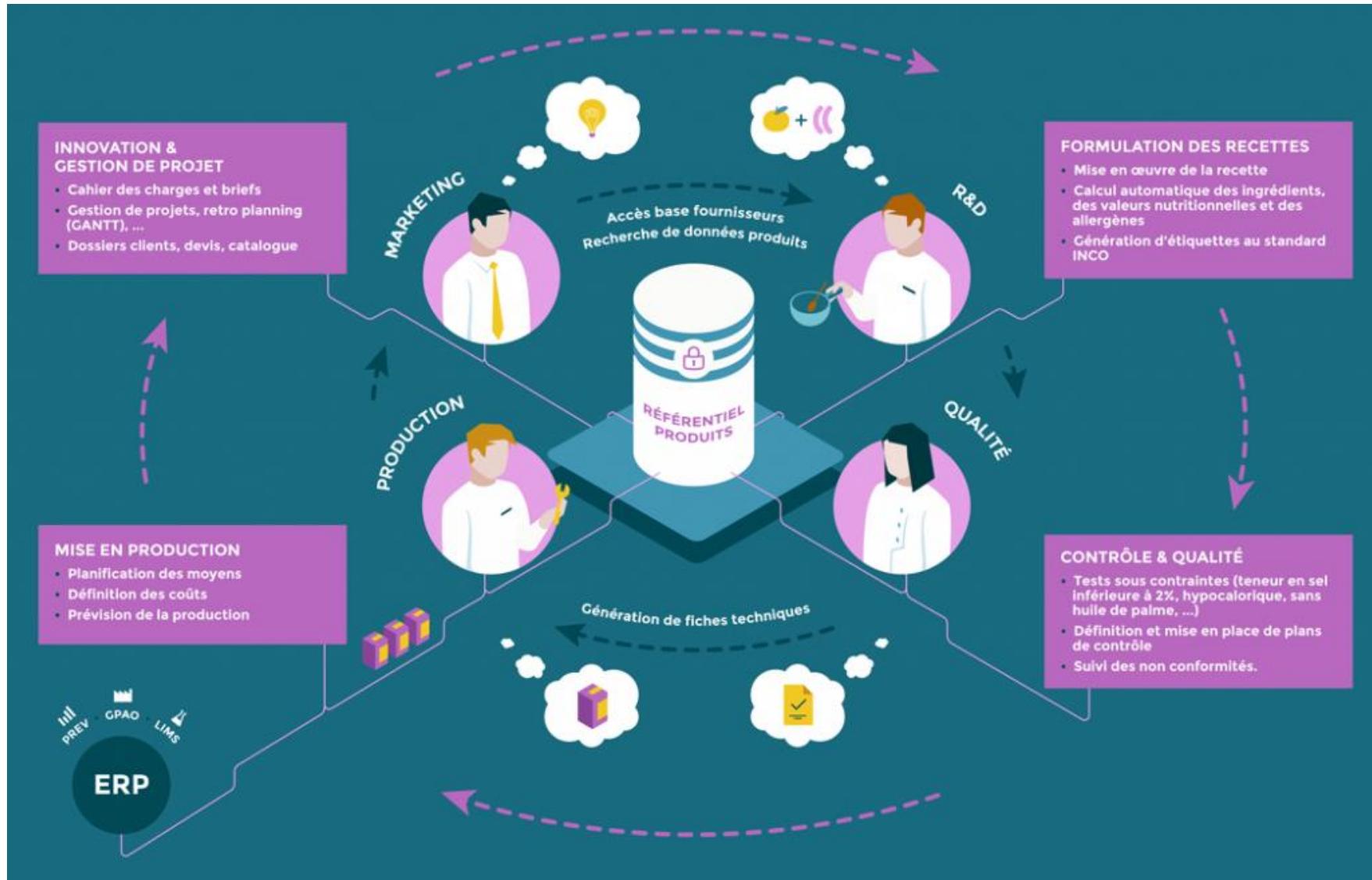
### Teachers planned for TDs (case study):

- José NZUZI
- Mohamad EL ASSWAD
- Rachid MOUDNI
- Serge PASSOLUNGHI
- Maxime BERRIOT

## Product Life cycle Management deployment

### Designing an Experimental Collaborative Tool (Simple and intuitive)

The objective is to design an experimental collaborative tool for Agrifood and perfumery industry : Internal Company software



Source Keendoo

# Introduction

MGO S.A group, specialize in agrifood and perfumery products, with 2000 people in the world.

The group has 4 main suppliers of raw materials and 10 outlets including 6 in France and 4 in Belgium. The Company has just bought two production sites in Asia for the Asian market and two production sites in Africa for the African market.

We imagine the creation of a PIP (Product Innovation Platform), to begin their digital transformation of a PLM with a view to internationalizing its production and sales activities. The company frustrated by traditional PLM systems and looking for a way to develop smart and connected products, to take advantage of a new approach: the Product Innovation Platform.

To make PLM systems efficient, it is necessary to ensure perfect communication between the different applications to result in the creation of a unique digital model.

If we compare the PLM to a huge relational database, the great difficulty is to ensure the operation of all links. It is on this condition, however, that a modification made by a project actor in the morning can be impacted on the entire product and, above all, validated to the final product's criteria immediately.

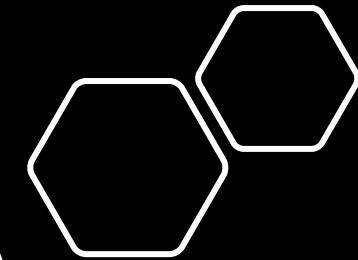
For a PLM system to work at the project level, compatibility between CAD and business software must be ensured.

A photograph of two glass jars filled with a light-colored powder, likely flour or sugar, sitting on a dark surface. In front of the jars are two silver spoons, one resting on top of the other. The background is a solid dark teal color.

Example of Products be  
developped

Agrifood

# Example of Products be developped



Perfumery

## 1. Product and reference management :

For each product, we have to offer two ranges with 5 different references.

- Agrifood : two ranges, each range 5 different references,
- Perfumery : idem

Reference management should be simple for each client and should include a reference such as for MGO Groupe:

i.e:

## Example of references management :

Products	Products reference	
	Standard	Modified
Agrifood	AG_00CH000	RE_00CH001
Perfumery	PE_00HG000	RE_00HG0001
.....		

## 2. Development :

**Customer Needs:** the software should be able to manage customer needs and transform them into detailed requirements & specifications. This is very important in PLM (As Specified Baseline)

**Single BOM:** Any product has many type of BOMs(EBOM, MBOM...). To simplify the platform, we will go with single BOM solution which will contain: Requirements, Detailed product, manufacturing processes, resources. Link should be managed between different BOM nodes.

**Extraction:** from the platform, it should be possible to extract documentations needed for procurement and invoices. These documents normally contain specific information about product specifications & other helpful information that will be communicated to customer. These information will be used to construct customer final invoice, price & execution time.

## Design process

To use the PLM platform in a suitable field of application, the design approach here is a routine design or re-design approach.

The various stages of the project are:

- Iteration 0: analysis of the existing by tests and simulations. Measuring the discrepancy between the service functions expected in the specifications provided and the service functions performed by the product studied,
- Iterations 1 to n: pre-design of the system to reduce the gap between the expected and the realized.

Each iteration here corresponds to a new version of the complete model of the product (including the skeleton of the part, the CAD of the complete product, the results of the simulations carried out in order to validate the performance and responses of the

## Managing right access

In addition, for managing the life phases of digital data, an essential contribution of the PLM is the management of different users' access to this data.

There are many issues in projects involving a parent company and suppliers of different ranks in the course of carrying out a project.

## **Product configuration management :**

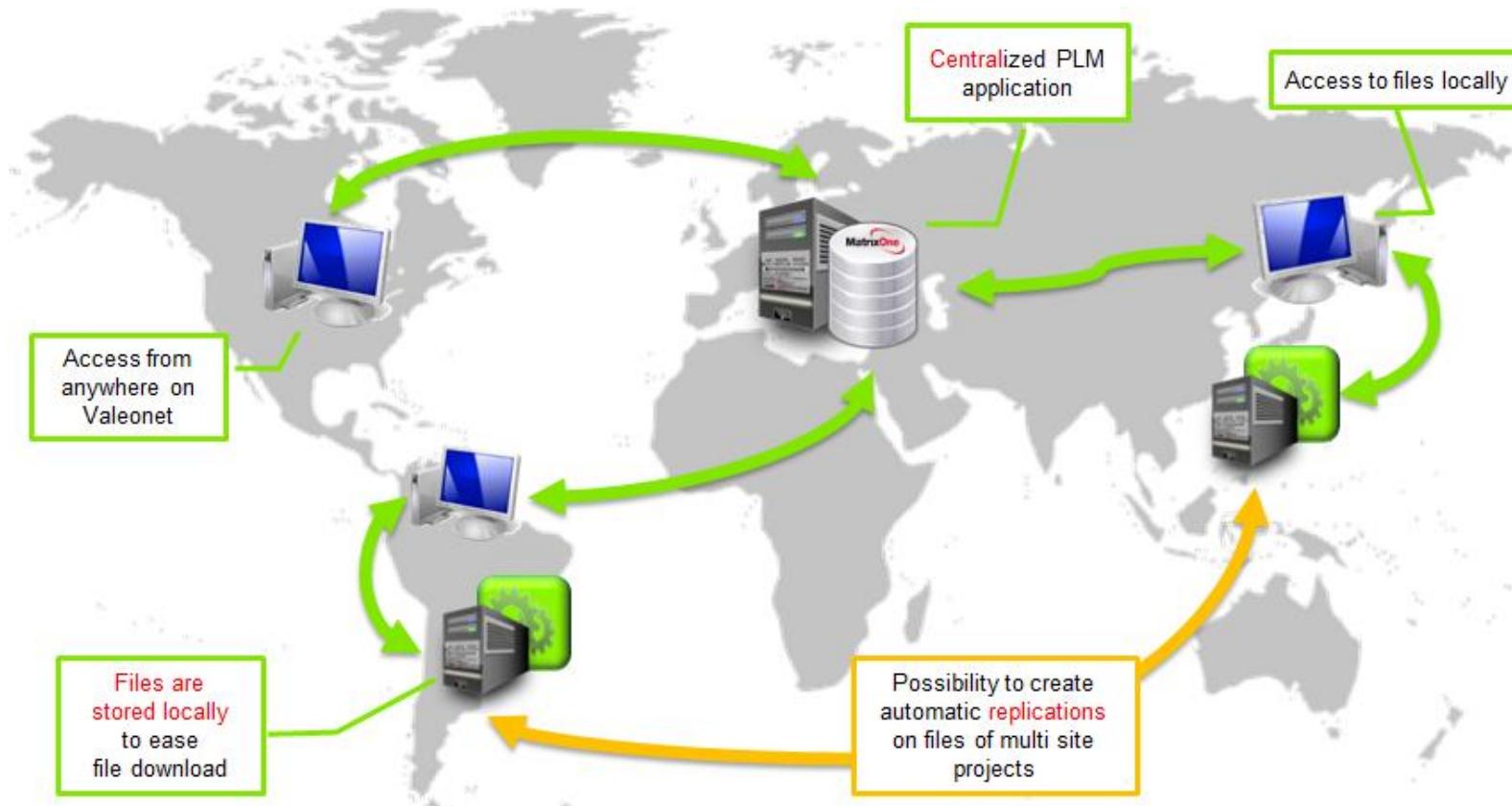
In managing an infrastructure, the need is not simply to manage all documents, but to manage document files and documentation applicable at a given time.

## **Compatibility between apps**

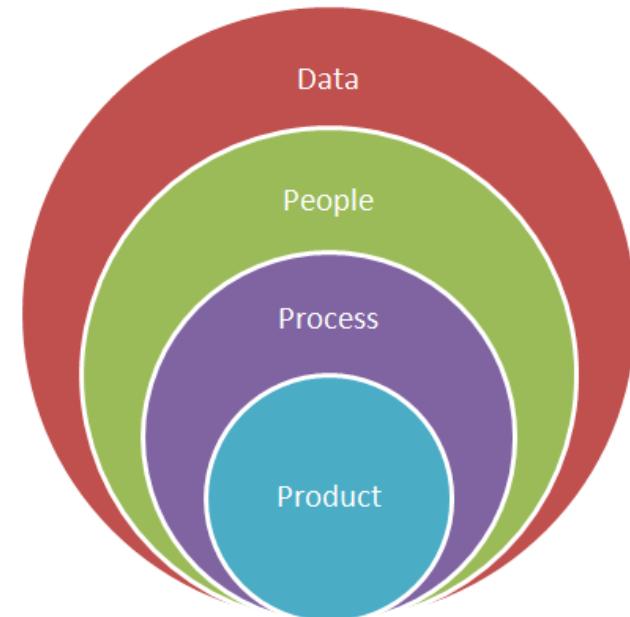
For a PLM system to work at the project level, compatibility between CAD and business software must be ensured.

- Cost price simulation
  - Powerful search tool
  - Versioning of recipes and formulations
  - Project Management
  - Workflows
  - Dashboards
  - Optimize development time
  - Improving costs and therefore margins
  - Mobile access
- 
- Responsiveness to respond to calls for tenders
  - Delivering the right data at the right time
  - Make strategic decisions based on consolidated and reliable data
  - Increase data traceability for regulatory compliance
  - Work with a simple and intuitive tool designed in collaboration with a team

## Connection between different sites



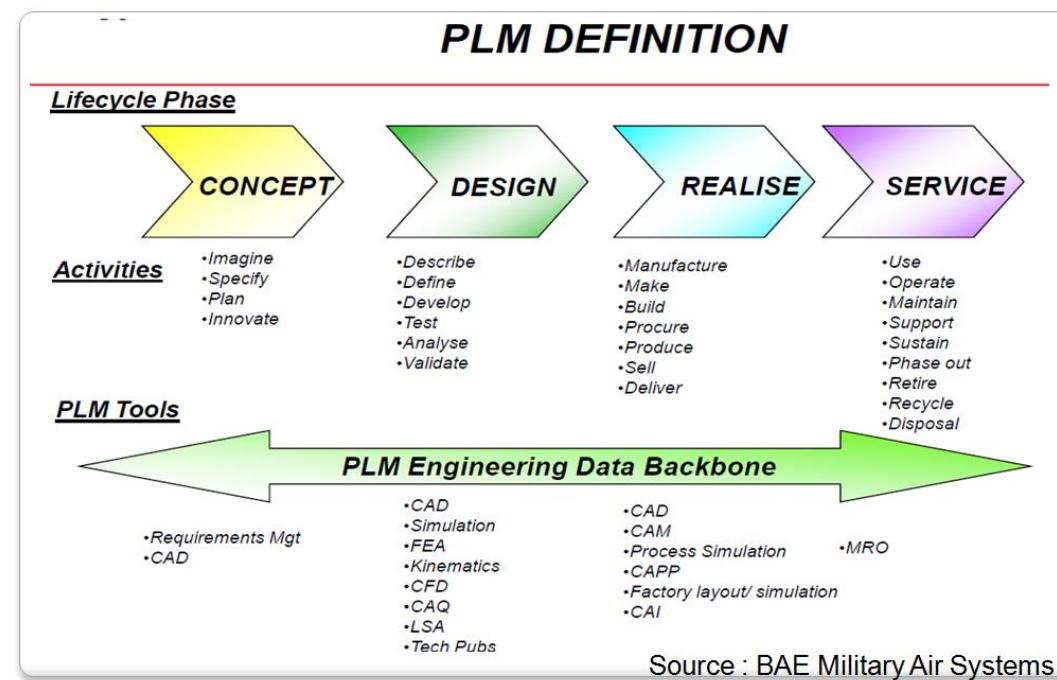
## PLM is made of ...



# STUDY

The manufacturing of an industrial product requires to know the composition of the product and the different stages of its development.

That means :

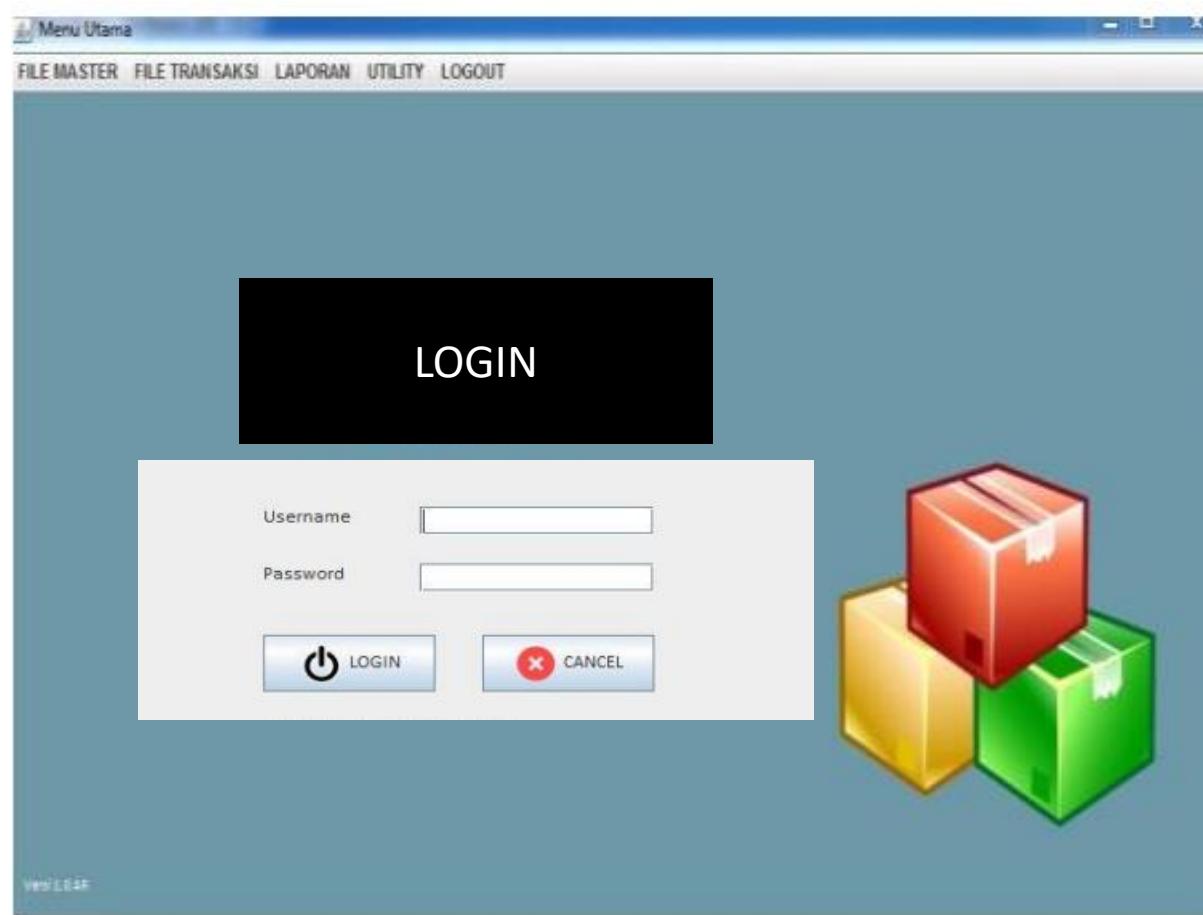


# Work to be done

- I. First session (3h) : Make the choice of program (Access, python...). learn Access programming. Prepare the work for Design of your tool. **Sharing tasks between students**
- II. Starting of Designing the **experimental collaborative tool for industry (3x3=9h)**; Internal Company software managing data
- III. Testing the tool(3h) (to be validated by the teacher)
- IV. Final presentation (3h)

# Example

## MAIN MENU PAGE



# EXAMPLE PLANNING

**Planning**

Pilih Barang : Guide comp level K39A \*

Minggu Ke 1 (P1)	Minggu Ke 2 (P2)	Minggu Ke 3 (P3)	Minggu Ke 4 (P4)
1500	2250	3450	1300

**Proses**

Produksi Per Minggu				Bahan Harus Di pesan		
Minggu 1	Minggu 2	Minggu 3	Minggu 4	Bahan	Stok di gudang	Kurang (harus dibeli)
1500	2250	3450	1300	Guide Comp Level K39A	2500	- 6000
				ZNNI 1.0 x 105 x C	28415	- 1585
				ZNNI 1.0 x 84 x C	14720	- 3280

**More**

**Create Project - Microsoft Internet Explorer**

### Create Project

**Steps**

1. Create a Project
2. Select the Team
3. Compose Invitation
4. Define Details
5. Define More Details

\* Project Name: TRAINING PROJECT

\* Template: Design

Access Group: Project Members Only

Type: Project

Estimated Start: [ ] MM/DD/YYYY

Duration: [ ] days

Deadline: [ ] MM/DD/YYYY

Description: TRAINING PROJECT FOR PROJECTLINK 7  
TRAINING

Allow sharing to other projects

Start project and send invitations to team

Prev Next OK Cancel

Local intranet

**Create Project - Microsoft Internet Explorer**

### Create Project

**Steps**

1. Create a Project
2. Select the Team
3. Compose Invitation
4. Define Details
5. Define More Details

**Team Members**

Roles/Members	Actions	Joined	E-mail	Phone	Organization
Consultant	- Pick an Action -				
Designer	- Pick an Action -				
Guests	- Pick an Action -				
Manufacturer	- Pick an Action -				
Members	- Pick an Action -				
Project Manager	- Pick an Action -				

Copy Paste Remove E-mail Expand Collapse Add Roles Add Members E-mail Team

Prev Next OK

Local intranet

The screenshot shows a search interface with a sidebar and a main results table.

**Search:** "ENG" (highlighted)

**State:** Standard Only (checkbox selected)

**Classifications:**

- Types
- Associated Organization
- TPL
- Technology
- Metric
- Maturity
- Other Classification

**Attributes:**

- Name
- Revision
- Description
- State
- Policy

**Search Results (according to search criteria):** 1 - 20 of approx. 761 Results

Name	Revision	Type / Family	Description	State
AML024695	A	AML		Created
B00000097_00	A	Assembly Board	CLIM ECC0620	Created
B00000105_00	B	Assembly Board	B5 LEFT BACK LIGHTED VERSION C	Released
B00000166_00	A	Assembly Board	Driver PLC (transmitter-receiver) for For	Created
B00000227_00	A	Assembly Board	Tuning resistors W169 Basis	Created
B00000314_00	A	Assembly Board	PL Porter seat recliner motor	Created
B00017_01	A	Assembly Board	HDC J84 M INTER VARIANT: bom_wor	Created
B00199_00	A	Assembly Board	CARTE ORCADE 2	Created
B00199_01	A	Assembly Board	CARTE ORCADE 2 VARIANT: bom_v2	Created
B00199_02	A	Assembly Board	CARTE ORCADE 2 VARIANT: bom_v1	Created

## Attributes refinement zone

Attributes

Name	<input type="text" value="ENG"/>
Revision	<input type="text"/>

Search can be refined according to the given attributes. Edit an attribute opens a pop-up window closer to the attribute name.

**END**

**THANK YOU FOR YOUR  
ATTENTION**